

**What is claimed is:**

1. A method for multiplexing data packets comprising steps of:  
receiving a plurality of data packets to produce a plurality of received data packets, wherein each received data packet of the plurality of received data packets comprises a routing address;  
determining an address label for each received data packet based on the data packet's routing address;  
adding the address label determined for each received data packet to the data packet to produce a modified data packet; and  
multiplexing the modified data packets.
2. The method of claim 1, further comprising a step of deleting each received data packet's routing address from the data packet.
3. The method of claim 1, further comprising a step of adding a new data transmission header to the multiplexed data packets.
4. The method of claim 3, wherein the data transmission header comprises a transport layer header.
5. The method of claim 3, wherein the data transmission header comprises a multi-protocol address label switching (MPLS) header.
6. The method of claim 3, further comprising a step of routing the multiplexed data packets based on the added data transmission header.
7. The method of claim 1, wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets.
8. The method of claim 1, further comprising a step of creating a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address.
9. A method for point-to-point transmission of data comprising steps of:

receiving, by a data transmitting device, a plurality of data packets to produce a plurality of received data packets, wherein each received data packet of the plurality of received data packets comprises a routing address;

determining, by the data transmitting device, a address label for each received data packet based on the data packet's routing address;

adding, by the data transmitting device, the address label determined for each received data packet to the data packet to produce a modified data packet;

multiplexing, by the data transmitting device, the modified data packets;

adding, by the data transmitting device, a data transmission header to the multiplexed data packets to produce a data transmission unit; and

transmitting, by the data transmitting device, the data transmission unit to a data receiving device.

10. The method of claim 9, further comprising a step of deleting, by the data transmitting device, each received data packet's destination address from the data packet.

11. The method of claim 9, further comprising steps of:

receiving the data transmission unit by the data receiving device;

extracting, by the data receiving device, the modified data packets from the data transmission unit; and

routing, by the data receiving device, each modified data packet based on the routing address corresponding to the data packet's address label.

12. The method of claim 11, further comprising steps of:

deleting, by the data receiving device, the address label from each modified data packet; and

adding, by the data receiving device to each modified data packet, the routing address corresponding to the modified data packet's address label.

13. The method of claim 9, further comprising a step of creating a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address.

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14. The method of claim 13, wherein the connection table is created by the data transmitting device and conveyed by the data transmitting device to the data receiving device.
15. The method of claim 13, wherein the step of routing each modified data packet comprises a step of routing, by the data receiving device, each modified data packet by reference to the connection table.
16. The method of claim 9, wherein a received data packet of the plurality of received data packets is formatted based on a different data transmission protocol than another received data packet of the plurality of received data packets.
17. The method of claim 9, further comprising steps of:  
receiving a data transmission unit;  
determining a routing address of each modified data packet included in the data transmission unit based on the modified data packet's address label; and  
forwarding each modified data packet based on the determined routing address.
18. A data transmitting device for transmitting multiplexed data packets, the data transmitting device comprising:  
a receiving unit that receives a plurality of data packets to produce a plurality of received data packets, wherein each received data packet of the plurality of received data packets comprises a routing address;  
a processor coupled to the data receiving unit that determines a address label for each received data packet based on the data packet's routing address, adds the address label determined for each received data packet to the data packet to produce a modified data packet, and multiplexes the modified data packets; and  
a transmitting unit coupled to the processor that transmits the multiplexed data packets.
19. The data transmission device of claim 18, wherein the processor further deletes each received data packet's routing address from the data packet.

20. The data transmission device of claim 18, wherein the processor further determines a data transmission header for the multiplexed data packets and adds the data transmission header to the multiplexed data packets.

21. The data transmission device of claim 18, wherein the processor further creates a connection table that comprises the routing address of each received data packet and the address label corresponding to each routing address.

22. The data transmission device of claim 21, wherein the transmitting unit transmits the connection table to a data receiving device.

23. A data receiving device for receiving a data transmission unit comprising a plurality of multiplexed data packets, wherein each data packet of the multiplexed data packets comprises an address label, the data receiving device comprising:

a receiving unit that receives the data transmission unit; and

a processor coupled to the receiving unit that extracts a plurality of data packets from the data transmission unit, determines a routing address for each data packet of the plurality of data packets based on the address label, and routes each data packet based on the data packet's determined routing address.

24. The data receiving device of claim 23, further comprising a memory coupled to the processor that stores a connection table comprising at least one address label and a routing address corresponding to the at least one address label, and wherein the processor determines a routing address for each data packet by reference to the connection table.

25. The data receiving device of claim 23, wherein the data transmission unit further comprises a data transmission header corresponding to the data receiving device.